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Original Article

Fall in Hematocrit per 1000 Parasites Cleared From Peripheral Blood: A Simple Method for Estimating Drug-Related Fall in Hematocrit After Treatment of Malaria Infections

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Abstract

A simple method to estimate antimalarial drug-related fall in hematocrit (FIH) after treatment of *Plasmodium falciparum* infections in the field is described. The method involves numeric estimation of the relative difference in hematocrit at baseline (pretreatment) and the first 1 or 2 days after treatment begun as numerator and the corresponding relative difference in parasitemia as the denominator, and expressing it per 1000 parasites

cleared from peripheral blood. Using the method showed that FIH/1000 parasites cleared from peripheral blood (cpb) at 24 or 48 hours were similar in artemether–lumefantrine and artesunate–amodiaquine-treated children (0.09; 95% confidence interval, 0.052–0.138 vs 0.10; 95% confidence interval, 0.069–0.139%; $P = 0.75$) FIH/1000 parasites cpb in patients with higher parasitemias were significantly ($P < 0.0001$) and five- to 10-fold lower than in patients with lower parasitemias suggesting conservation of hematocrit or red cells in patients with higher parasitemias treated with artesunate–amodiaquine or artemether–lumefantrine. FIH/1000 parasites cpb were similar in anemic and nonanemic children. Estimation of FIH/1000 parasites cpb is simple, allows estimation of relatively conserved hematocrit during treatment, and can be used in both observational studies and clinical trials involving antimalarial drugs.

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